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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/516,076	11/29/2004	Haruhisa Saitoh	046124-5344	7690
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55694 7590 03/07/2007
DRINKER BIDDLE & REATH (DC)
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WASHINGTON, DC 20005-1209

EXAMINER

LAUCHMAN, LAYLA G

ART UNIT	PAPER NUMBER
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2877

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS	03/07/2007	PAPER
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/516,076

Applicant(s)

SAITOH ET AL.

Examiner

L. G. Lauchman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5 and 6 is/are rejected.
- 7) ☐ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/22/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

The preliminary amendment filed 11/29/2004 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Stimson et al (US 6,134,002) (“Stimson”).

Stimson teaches a confocal scanning device for spectrally resolving an image of a sample (col. 10, lines 40-44), said device comprising (see Figs. 3-6A): a laser light source (304) for emitting said pulse excitation light; a measurement optical system (elements 310, 334, 306, 320) for guiding said pulse excitation light emitted by said laser light source (304) to said sample (330) and thereby illuminating said sample, and guiding and outputting said fluorescences emitted from said sample; a streak camera (340, col. 7, line 3) for recording the variations with time of the fluorescence intensities of said fluorescences that arrive upon being output from said measurement optical system; and fluorescence lifetime distribution image creation means 342 (col. 7, lines 15-40) for calculating the fluorescence lifetimes based on said variations with time of the fluorescence intensities recorded by said streak camera and creating a fluorescence lifetime distribution image (col. 10, lines 2-5; lines 17-38); said measurement optical system comprising first scanning means (310), light separation means (334), second scanning means

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(306), and an objective optical system (320), said first scanning means (310) scanning said pulse excitation light, emitted by said laser light source (304), in a first direction (col. 2, lines 17-20), said light separation means (334) guiding said pulse excitation light, arriving from said first scanning means (310), to said second scanning means (306) and guiding said fluorescences, arriving from the second scanning means (306), to said streak camera (340), said second scanning means (306) scanning said pulse excitation light, arriving from said light separation means (334), in a second direction perpendicular to said first direction and guiding said fluorescences, output and arriving from said objective optical system (320), to said light separation means (334) so that said fluorescences pass through the same optical path that said pulse excitation light passed through in being directed from said light separation means (334) to said second scanning means (306), and said objective optical system (320) converging and illuminating said pulse excitation light that has been scanned in said first direction and second direction respectively onto respective scanning points in said sample and outputs the fluorescences (col. 6, lines 39-50), which are emitted from said respective scanning points upon illumination of said pulse excitation light, to said second scanning means (306).

Said first scanning means (310) and second scanning means (306) are respectively galvanomirrors, and said light separation means (334) is a dichroic mirror (col. 6, lines 20-21, and col. 6, line 67).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stimson et al (US 6,134,002) ("Stimson"), as applied to claim 1 above, and in view of PCT WO 02/10727 (Japan Science and Technology Corporation), and further in view of

As to Claims 2 and 3, Stimson disclose all as applied to Claim 1, with the exception of pulse excitation light having a pulse width of no more than 150 fs, a peak power density at said convergence point of no less than $1 \times 10^5 \text{ W/cm}^2$, a wavelength of no less than λ and no more than 2λ , said pulse excitation light having a wavelength of no less than 750 nm and no more than 1000 nm.

The PCT reference discloses an ultrashort pulse laser of the order of femto-seconds (fs). It would be obvious to one skilled in the art to use a pulse width of 150 fs, since the use of an ultrashort laser would have produced controllable multi-wavelength output. It would have been obvious to produce the chosen power densities, since it would have naturally excite samples at power densities enough to produce fluorescence, and it would be obvious to have chosen the range between λ and 2λ , since it would concur the principles of two-photon excitation. It would be obvious to one skilled in the art to have chosen the range of 750nm-1000nm as optimum wavelengths based on the target of the sample.

As to Claim 6, the apparatus of Claim 2 would be able to perform the method as claimed.

Allowable Subject Matter

Claims 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to disclose the objective optical system moving along a direction perpendicular to both the first direction and the second direction, in combination with the rest of the limitations of claim 1.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to L. G. Lauchman whose telephone number is (571) 272-2418. The examiner's normal work schedule is 8:00am to 4:30pm (EST), Monday through Friday. If attempts to reach examiner by the telephone are unsuccessful, the examiner's supervisor Gregory J. Toatley, Jr. can be reached on (571) 272-2059, ext. 77.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application should be directed to the TC receptionist whose telephone number is (571) 272-1562.

A handwritten signature in black ink, appearing to read "L. G. Lauchman", with a stylized flourish at the end.

L. G. Lauchman
Primary Examiner
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3/4/2007